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H4K KEB

(56) Documents Cited

GB 2121568 A **GB 2028058 A** **EP 0188857 A1**
EP 0115924 A1 **US 4656657 A** **US 4585904 A**
US 4270024 A

(58) Field of Search

UK CL (Edition K) H4K KEB KFH
INT CL⁵ H04M

(54) **Telephone call monitor**

(57) THE TELEPHONE CALL MONITOR can be incorporated in a telephone to provide up to four additional technical features: viz A VISUAL COST DISPLAY 1 which shows the ongoing cost of the telephone call being made, A LAST CALL COST DISPLAY 2, which shows the cost of the last call made, A ROLLING COST TOTAL DISPLAY 3, which gives the accumulative cost total of all calls made to date, and A NUMERICAL COUNTER DISPLAY 4, which shows the total number of calls made to date. A visual or audible warning is associated with the VISUAL COST DISPLAY 1 - activated automatically when a pre-set cost level is reached. UNIT COST CONTROLS are incorporated in the unit which permit a variation of charges and time settings within a given time cycle in respect of the VISUAL COST DISPLAY 1. The monitoring unit may also be a separate unit, either linked or independent from the existing telephone.

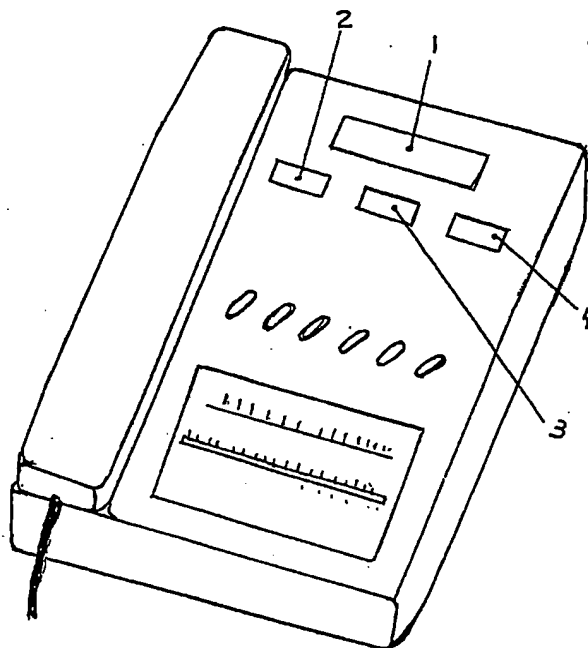


FIGURE 1.

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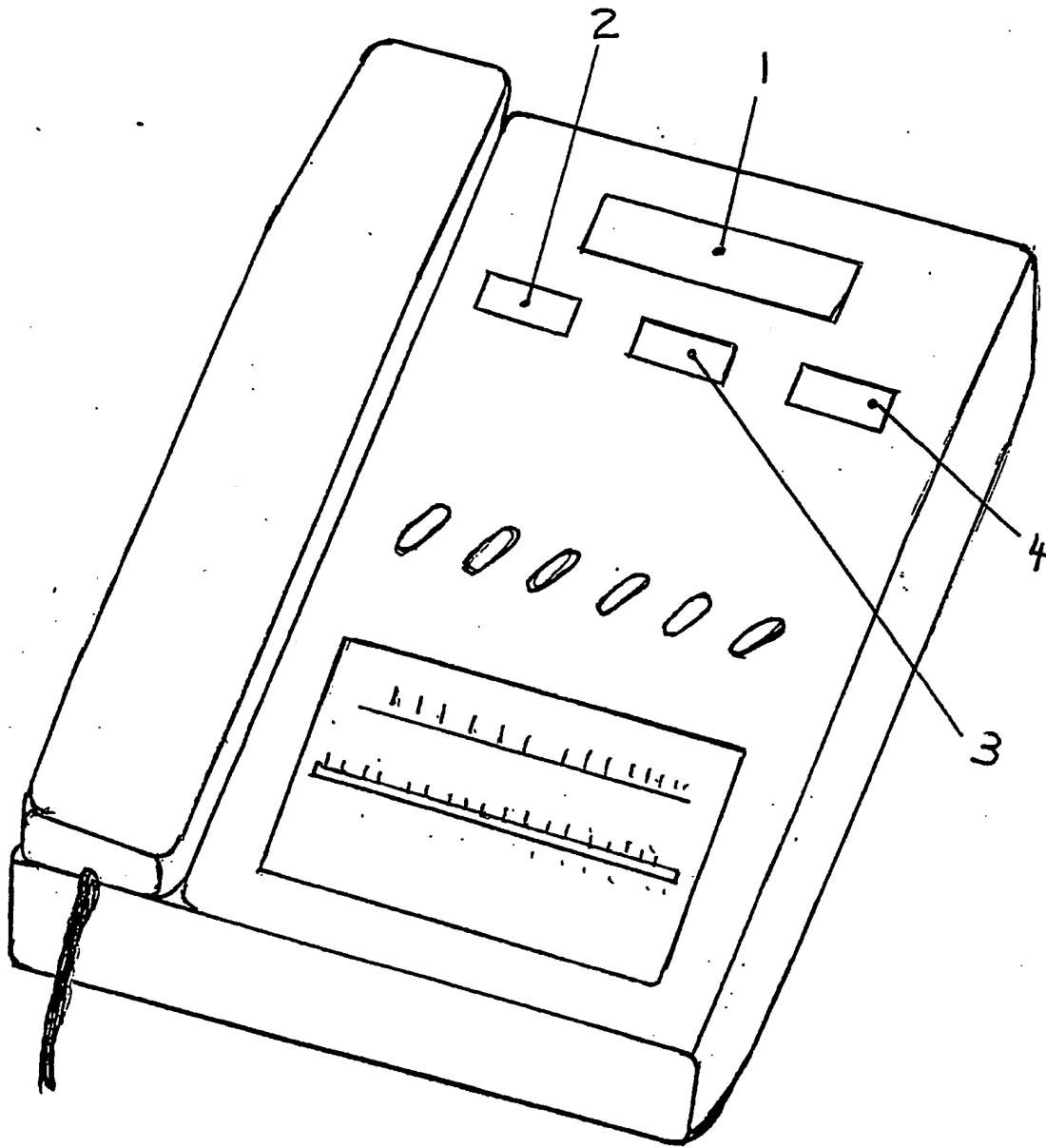


FIGURE 1.

FIGURE 2

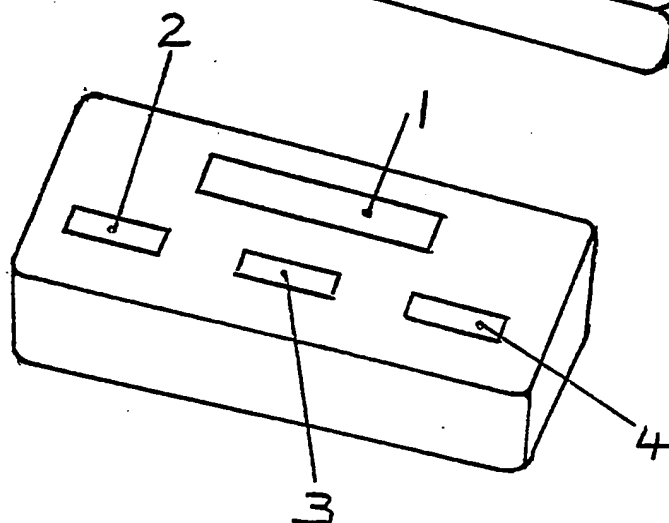
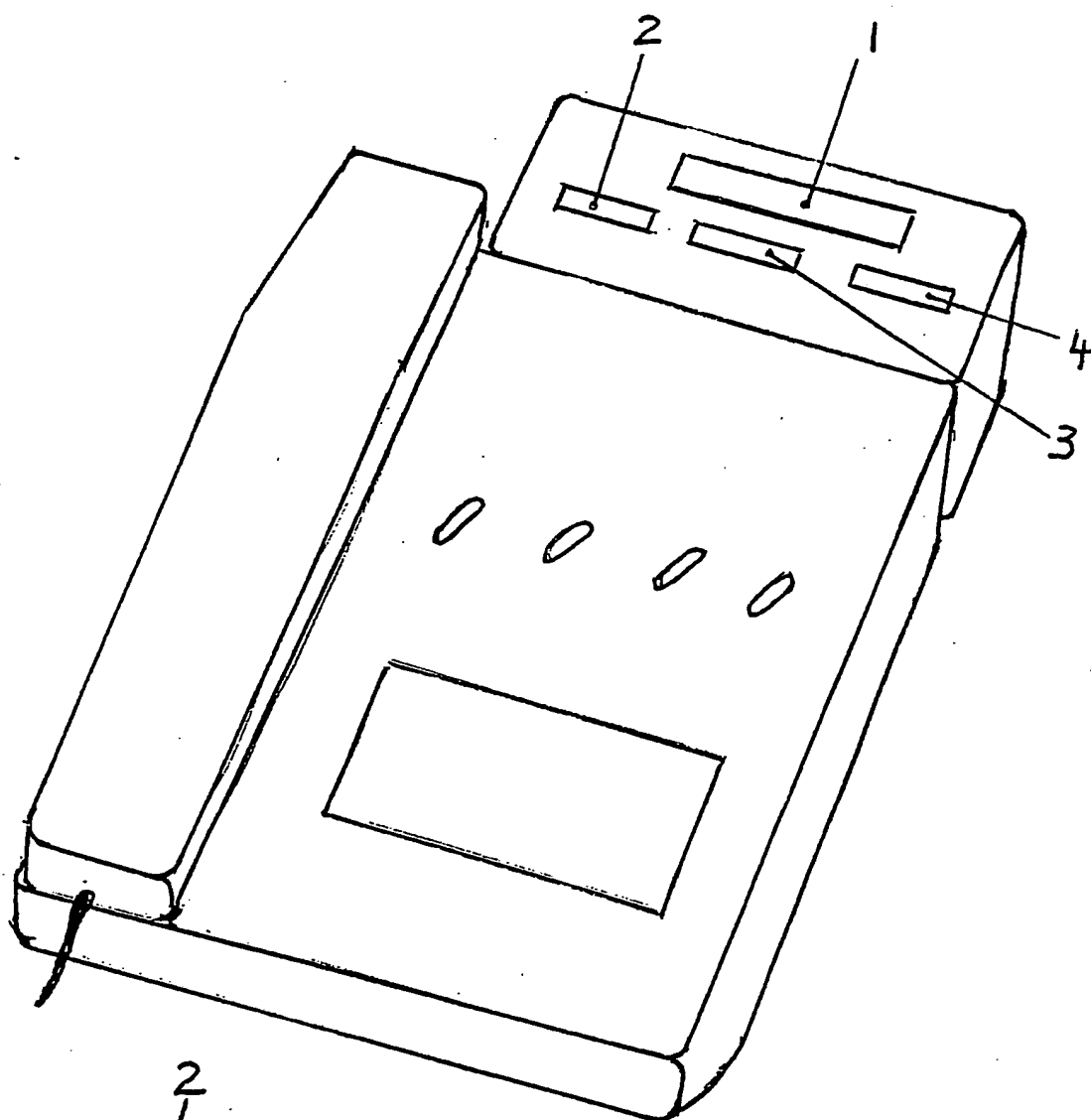


FIGURE 3

TELEPHONE CALL MONITOR

This invention enables **THE COST** of telephone calls to be monitored.

A wide range of telephones and ancillary equipment are available on the open market, and they incorporate numerous technical features, but nothing is available to indicate either visually or audibly, **THE ACTUAL COST OF THE CALL AS IT IS BEING MADE**.

Consequently consumers have difficulty of controlling the cost of their telephone bills.

THE TELEPHONE CALL MONITOR can be either:-

- (a) An additional feature incorporated in a new telephone to compliment existing features or
- (b) A separate unit linked physically and/or electronically to an existing telephone or
- (c) A separate unit operating independently of the telephone.

THE TELEPHONE CALL MONITOR has prominent visual display feature, which shows the cost of the actual call **AS IT IS BEING MADE**. The visual display has a flashing warning light which can be pre-set to operate at a desired cost level, and which stops when the call ends. Audio type **TELEPHONE CALL MONITORS** give out an audible warning which can also be pre-set to operate at a desired cost level and which stops when the call ends.

THE TELEPHONE CALL MONITOR is a visual and/or audible aid which assists consumers to control the level of their telephone expenditure. It creates consumer awareness of telephone call costs.

In the case of options (a) and (b) the visual cost display and/or the audio unit is activated either automatically when the telephone caller is connected to the telephone call receiver, or alternatively, manually. Option (c) is activated manually.

All models - options (a), (b) and (c) - have **UNIT COST CONTROLS** which can be set either at current telephone charge rates or at other desired unit cost rates which may take into account apparatus rental charges and/or other

charges. **THE UNIT COST CONTROLS** permit a variation of charges within a given period, to cater for the different charge rates currently levied including those for peak and off-peak periods.

All models - options (a), (b) and (c) - have **A LAST CALL COST DISPLAY** which shows the cost of the last telephone call made. This Display re-sets automatically to zero either when the next call ends or at some other pre-determined time. **THE LAST CALL COST DISPLAY** cannot be re-set manually.

All models - options (a), (b) and (c) - have **A ROLLING COST TOTAL DISPLAY** which shows the accumulative cost total of all calls made and which re-sets to zero automatically at a given cost level. **THE ROLLING COST TOTAL DISPLAY** cannot be re-set manually.

All models - options (a), (b) and (c) - have **A NUMERICAL COUNTER DISPLAY** which shows the total number of calls made. The Counter re-sets to zero automatically after a given number of calls. **THE NUMERICAL COUNTER DISPLAY** cannot be re-set manually.

All models - options (a), (b) and (c) - are either mains electricity or battery powered.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying illustrations in which:

Figure 1

Shows in perspective **THE TELEPHONE CALL MONITOR** incorporated in a new telephone to compliment other existing features.

Figure 2

Shows **THE TELEPHONE CALL MONITOR** constructed as a separate unit and linked physically and/or electronically to an existing telephone.

Figure 3

Shows **THE TELEPHONE CALL MONITOR** constructed as a separate unit operating independent of the telephone.

DESCRIPTION

Referring to the drawings - Figure 3 shows **THE TELEPHONE CALL MONITOR** which comprises a simple box type structure constructed of any suitable material, of size and shape complimentary to standard telephone equipment, into which is assembled all the parts and electrical equipment and circuitry necessary to provide the information contained in the features of **THE TELEPHONE CALL MONITOR**.

The prominent **VISUAL COST DISPLAY 1** shows the actual on going cost of the telephone call as it is being made. This particular model operates independently of the telephone and the cost mechanism is activated manually by any suitable means. Similarly when the call ends the cost mechanism is stopped manually.

Figure 2 shows **THE TELEPHONE CALL MONITOR** attached by any suitable method to an existing telephone. It is also linked electronically so that the **VISUAL DISPLAY 1** is activated automatically when the telephone caller is connected to the telephone call receiver - viz when the telephone call is answered or at some other pre-determined time. **THE VISUAL COST DISPLAY** mechanism is activated automatically by **OUTGOING CALLS ONLY**. **THE VISUAL COST DISPLAY 1** shows the on going cost of each telephone call as it progresses and it stops and returns to zero when the call ends - viz when the line is disconnected or at some other pre-determined time. The cost of the call just made is then automatically shown in the **LAST CALL COST DISPLAY 2**. This cost remains on display until the next call is ended or until another pre-determined time. It cannot be re-set manually.

Incorporated in **THE VISUAL COST DISPLAY 1** panel is a flashing warning light which can be pre-set to activate when the cost of the call reaches a given cost level. The flashing light stops when the telephone call ends. It cannot be stopped manually. Some models may also incorporate audible warning and costing features which operate in a similar manner.

THE ROLLING COST TOTAL DISPLAY 3 shows the accumulative total cost of all telephone calls made to date. It cannot be re-set manually. The display re-sets automatically to zero after a pre-determined cost total is reached.

THE NUMERICAL COUNTER DISPLAY 4 shows the total number of calls made to date. It cannot be re-set manually. It re-sets automatically to zero after a pre-determined total is reached.

Models may incorporate "a reserve" battery to store the accumulated information in the various features, in the event of a mains power failure or disconnection.

FIGURE 1 shows all the features of THE TELEPHONE CALL MONITOR - displays 1, 2, 3 and 4 - incorporated in a new telephone to compliment other technical features.

Incorporated in all models are UNIT COST CONTROLS which enable the unit cost charges to be set at a chosen level. The controls permit a variation of charges and time settings, within a given time cycle, to cater for the different charge rates levied, including those for peak and off-peak periods. The consumer may chose to set the unit cost at a price which takes into account the cost of apparatus rental charges and/or other charges.

CLAIMS

1. **THE TELEPHONE CALL MONITOR** can be incorporated in a new telephone to provide new additional features to compliment existing features. It comprises a prominent **VISUAL COST DISPLAY** which shows the on-going cost of the telephone call as it is being made. **THE VISUAL COST DISPLAY MECHANISM** is activated automatically when the telephone caller is connected to the telephone call receiver - viz when the telephone call is answered - or at some other pre-determined time. **THE VISUAL COST DISPLAY MECHANISM** is activated automatically by **OUTGOING CALLS ONLY**. **THE VISUAL COST DISPLAY MECHANISM** stops and returns to zero when the call ends - viz when the line is disconnected - or at some other pre-determined time. The cost of the call just made is then automatically shown in the **LAST CALL COST DISPLAY**. This cost remains on display until the next call is ended or until another pre-determined time. It cannot be re-set manually. Incorporated in the **VISUAL COST DISPLAY PANEL** is a flashing warning light which can be pre-set to activate when the cost of the call reaches a given cost level. The flashing light stops when the telephone call ends or at some other pre-determined time. It cannot be stopped manually. Another feature is the **ROLLING COST TOTAL DISPLAY** which shows the accumulative total cost of all telephone calls made to date. It cannot be re-set manually. The display re-sets automatically to zero after a pre-determined cost total is reached. A further feature is the **NUMERICAL COUNTER DISPLAY** which shows the total number of calls made to date. It cannot be re-set manually. It re-sets automatically to zero after a pre-determined total is reached. **THE TELEPHONE CALL MONITOR** has **UNIT COST CONTROLS** which enable the unit cost charges to be set at a chosen level. The controls permit a variation of charges and time settings within a given time cycle, to cater for the different charge rates levied, including those for peak and off-peak periods.
2. A **TELEPHONE CALL MONITOR** as claimed in Claim 1 where in all electrical and component parts are contained within a simple box type structure of shape and sizes complimentary to standard telephone equipment, where in means are provided to manually start and stop the **VISUAL COST DISPLAY MECHANISM**. The self-contained unit being either mains electricity or battery powered.

3. A TELEPHONE CALL MONITOR as claimed in Claim 1 or Claim 2, where in means are provided for simply securing the unit to a standard telephone and connecting it electronically to enable it to function automatically as in Claim 1.
4. A TELEPHONE CALL MONITOR as claimed in Claim 1 or Claim 2 or Claim 3, wherein equipment is provided to incorporate audible warning and costing features within the VISUAL COST DISPLAY.
5. A TELEPHONE CALL MONITOR as claimed in Claim 1 or Claim 2 or Claim 3 or Claim 4, wherein A RESERVE BATTERY is provided to store the accumulated information within the Unit in the event of a mains power failure or disconnection.
6. A TELEPHONE CALL MONITOR substantially as described herein with reference to Figures 1, 2 and 3 of the accompanying drawings.

Patents Act 1977

Examiner's report to the Comptroller under
Section 17 (The Search Report)

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Relevant Technical fields

(i) UK Cl (Edition K) H4K (KEB KFH)

Search Examiner

MR S J L REES

(ii) Int CL (Edition 5) H04M

Databases (see over)

Date of Search

28 AUGUST 1992

(i) UK Patent Office

(ii)

Documents considered relevant following a search in respect of claims

ALL CLAIMS

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2121568 A	(ANSWERCALL) whole document especially page 3 lines 93-119 and page 4 lines 116-130	1, 2, 3, 5
X	GB 2028058 A	(RICHARD) whole document	1, 2, 3, 5
X	EP 0188857 A1	(KNIGHT) whole document especially page 2 paragraph 2 and page 5 lines 31-35	1, 3, 5
X	EP 0115924 A1	(RATHDOWN) whole document especially page 2 line 8 - page 3 line 6, page 14 lines 12-15, page 16 lines 7-19	1-5
X	US 4656657	(HUNSICKER) whole document	1, 3, 4
X	US 4585904	(MINCONE) whole document especially column 10 line 33 - column 11 line 58	1-5
X	US 4270024	(THEIS) whole document especially lines 44-58 of column 2	1

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).